

HARDWARE ACCELERATOR FOR AN OBJECT-ORIENTED PROGRAMMING LANGUAGE

ABSTRACT

5

A method and apparatus for accelerating an object-oriented programming language are provided at a hardware gate level. In a Java-compliant embodiment, a Java Application framework is implemented in hardware. The Java.awt, Java.NET, and Java.IO application frameworks are supported in the preferred embodiment of the invention. Application framework classes are stored as libraries in a shared memory. Instances and methods of supported application framework classes that are executed by a Java program are offloaded to a hardware object management system. A software stub is provided as an interface between the hardware object management system and the central processing unit. Additional application frameworks can be supported by modifying or replacing the software stub. Hardware object management system requests are executed by an application framework-specific hardware accelerator. Application framework classes are retrieved from the shared memory as needed, and executed instructions are stored to the shared memory to be accessed by the central processing unit. Central processing unit processing of non-supported application framework instructions is continued during hardware accelerator execution of hardware object management system requests.

25